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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,187	10/18/2001	Stephen Staphanos	R22.12-0024	9523

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EXAMINER

JACKSON, ANDRE K

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,187

Applicant(s)

STAPHANOS, STEPHEN

Examiner

André K. Jackson

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3,5,6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al.

Regarding claim 1, Itoh discloses in "Analytical method for the determination of nitrogen, carbon, hydrogen and sulfur or chlorine and apparatus therefore" a sample inlet (27), gas inlet (31,8) a sample stream flow controller (49), a gas flow controller (35) a combustion furnace coupled to the sample stream flow controller to receive continuous flow of sample stream and gas the furnace being maintained at a temperature in excess of 680°C, a chiller (cooled tube 50) coupled to the furnace to receive the oxidized material. Itoh does not disclose a detector coupled to the chiller. However, Parth discloses in "Analytical apparatus" a detector (58) coupled to the chiller (54). Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify Itoh to include where a detector coupled to the chiller as taught by Parth since

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this would give a direct reading of the carbon. It has been noted that neither Itoh nor Parth teaches a continuous carbon measurement. However, Staffin et al. disclose in "Continuous total organic carbon analyzer and method" which teaches a continuous carbon measurement (Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Itoh to include a continuous carbon measurement as taught by Staffin et al. By adding this feature the user would be able to measure the carbon content without any interruptions. Itoh does not explicitly disclose where the sample flow controller is a "metering pump". However, the gas stream has a pump along with a metering device (37), which distributes the gas in a metered manner. This shows that one of ordinary skilled in the art could have a device to meter the sample flow controller to monitor how much of the sample is distributed.

Regarding claim 2, Itoh discloses a catalyst disposed in the combustion furnace (Column 2).

Regarding claim 3, Itoh discloses where the catalyst is a platinum based catalyst (Column 2).

Regarding claims 5 and 6, Itoh does not disclose where the metering pump provides a sample flow in the range of approximately 0.5 cc per minute to approximately 2.0 cc per minute. However, Parth discloses where the constant flow rate is 120 cc per second (Column 4). Parth does not disclose 0.5 cc per minute but the skilled artisan would be

able to adjust the flow rate without undue experimentation. Therefore, it is well within the purview of the skilled artisan to modify Itoh at the time of the invention to include where the metering pump provides a sample flow in the range of approximately 0.5 cc per minute to approximately 2.0 cc per minute since they are from the same field of endeavor.

Regarding claim 10, Itoh does not disclose where the output is indicative of total carbon in the sample stream. However, Parth discloses where the output is indicative of total carbon in the sample stream. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where the output is indicative of total carbon in the sample stream since they are from the same field of endeavor.

3. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al. as applied to claim 1 above, and further in view of Suzuki et al.

Regarding claim 7, neither Itoh, Parth nor Staffin et al. disclose a thermoelectric chiller. However, Suzuki et al. disclose a "Method for the removal of carbon dioxide present in gases and absorbent" which has a thermoelectric chiller. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include a thermoelectric since this would cool the sample in a faster time period.

Regarding claim 11, neither Itoh, Parth nor Staffin et al. disclose where the output is indicative total organic carbon in the sample stream.

However, Suzuki et al. disclose where the output is indicative total organic carbon in the sample stream (Column 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where the output is indicative total organic carbon in the sample stream as taught by Suzuki et al. since they are from the same field of endeavor.

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and Staffin et al. as applied to claim 1 above, and further in view of Furlong et al.

Regarding claim 8, neither Itoh, Parth nor Staffin et al. disclose where the detector is a non-dispersive infrared detector. However, Furlong et al. disclose "Selection of a TOC analyzer: analytical considerations " which disclose the use of a non-dispersive infrared detector. Therefore, to modify Itoh to include a non-dispersive infrared detector, as taught by Furlong et al., would have been clearly within the purview of the skilled artisan since the sensitivity of the instrument is enough to detect both carbon monoxide and carbon dioxide.

Regarding claim 9, neither Itoh, Parth nor Staffin et al. explicitly disclose where the non-dispersive infrared detector outputs a measurement of carbon dioxide in the zero to 100 ppm range. However, Furlong et al. disclose where the non-dispersive infrared detector outputs a measurement of carbon dioxide in the zero to 100 ppm range (Page 2). Therefore, it would have been obvious to one of ordinary skill in the art at

the time of the invention to modify Itoh to include where the non dispersive infrared detector outputs a measurement of carbon dioxide in the zero to 100 ppm range as taught by Furlong et al. since this gives the detector a wider range of detecting ability.

5. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itoh in view of Parth and further in view of Jolly.

Regarding claim 12, Itoh discloses a receiving a sample specimen (27) at a sample stream at a pre-selected flow rate (49), receiving a carbon free gas (31,8) at a pre-selected flow rate (35) a combustion furnace couple to the sample stream flow controller to receive a flow of sample stream and gas the furnace being maintained at a temperature in excess of 680°C, a chiller (cooled tube 50) coupled to the furnace to receive the oxidized material. Itoh does not explicitly disclose measuring a quantity of carbon dioxide generated by the combustion furnace, which would be indicative of the total carbon of the water. However, Parth discloses a detector (58) to measure the carbon dioxide. Therefore, it would have been obvious to one of ordinary skilled in the art at the time of invention to modify Itoh to include where a detector to measure the quantity of carbon dioxide as taught by Parth since this would give the user the knowledge of the amount of carbon from the sample. It is noted that neither Itoh nor Parth teaches a continuous carbon measurement. However, Jolly discloses in the patent entitled "Total organic carbon (TOC) and total inorganic carbon (TIC) calibration system" a quantity of carbon

dioxide which would be indicative of the total carbon of the water (Column 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Itoh to include a measure of a quantity of carbon dioxide, which would be indicative of the total carbon of the water. By adding this feature the user would be able to measure the carbon content without any interruptions.

Regarding claim 13, Itoh does not disclose where cooling the oxidized sample stream prior to the step of measuring the carbon dioxide quantity. However, Parth discloses where cooling the oxidized sample stream prior to the step of measuring the carbon dioxide quantity (Figure 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Itoh to include where cooling the oxidized sample stream prior to the step of measuring the carbon dioxide quantity since this is important to know in the wastewater industry.

Response to Arguments

6. Applicant's arguments filed 02/18/04 have been fully considered but they are not persuasive.

Applicant has argued that the combination of Itoh, Parth and Staffin et al. do not meet the claimed invention namely having a continuous flow of sample and a metering pump. Both Itoh and Staffin et al. disclose where the sample is continuously flowed (Claims 1,7 and Abstract) respectively. The flow meter's function is to provide a flow within a

specified range. Itoh provides the flow meter's function with that of the pump (Column 5, lines 1-11). Staffin et al. also disclose a metering pump (Column 1, 4 Figure 1).

7. Applicant's arguments with respect to claims 12 and 13 have been considered but are moot in view of the new ground of rejection.
8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone

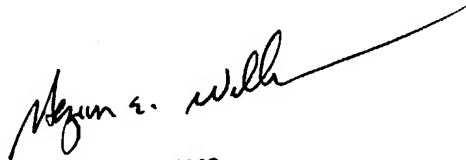
number is (571) 272-2196. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.J. 

April 13, 2004


HEZRON WILLIAMS
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